

PATENT SPECIFICATION



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PROVISIONAL SPECIFICATION

Improved Support for Fire Hose

I, FREDERICK WILLIAM BURT, of "St. Johns", Avon Road, Devizes, Wiltshire, British Subject, (by birth), do hereby declare the nature of this invention to be as follows:—

GENERAL INFORMATION.

The invention is an improved support for fire hose and comprises a device by means of which a fire fighting jet of any of the many sizes in general use, at usual pressures, can be under the hand control only, of one man only, for indefinite periods; and which also allows the setting up (assuming the branch and hose is laid ready and is in a water off condition) and removal from the scene of fire without assistance of any description. It is, in fact, a one man only support throughout all operations connected with its use, unless it is being used in very unfavourable circumstances or with a jet of very large diameter. The device has an elevation range of 0 degrees to about 75 degrees, and an accompanying lateral range (throughout its elevation range) of about 60 degrees inclusive. It is designed to take a type of female coupling which appears to be now made considerable use of by fire authorities, and it is not intended that any other type of coupling should be used; in addition it is designed for a definite size and type of rubber lined hose, as also appears to be made considerable use of by fire authorities.

The device comprises a support for the branch, coupling and hose adjacent, which support rests on the ground and at the rear of which is an adjustable operating handle. The part which grips the coupling is hinged and is held in its closed position by two screw down handled nuts, and it is not possible for the coupling to leave the device or to become dangerously loose, or move out of position, (assuming the device is correctly set up).

Bearing in mind the fact that the device is capable of supporting a substantial jet, and that it is for one man operation throughout, it is considered that handle control must exist at all times when in use, and therefore any method of adjustment of handle which would mean a temporary loss of such control cannot be

allowed. The adjustment of the handle angle relative to the jet elevation angle, therefore, is by a twist grip control, and all the working parts of this arrangement are enclosed, to avoid damage by water. This arrangement, however, does not allow the handle to be adjusted below breast height when the device is being used with a jet at 0 degrees elevation, so that, should skid occur, it can be checked by lowering the handle. The handle is of a length giving great leverage and control over the coupling and branch when raised in position from the ground, and the whole device is of substantial construction, and capable of withstanding a great amount of mis-use. It is suitable for use with almost all sizes of pumps and can be easily carried on any fire fighting appliance.

The purpose of the device is to reduce the branchman's effort to a very low percentage of that required to support a branch by hand, to avoid fatigue common to branch holding, and to make branch control a comfortable scientific operation.

It is considered that, to avoid accidents, careful instruction in its use is essential, and it would be of advantage for firemen to have a knowledge of "elevation", "lateral range", "degrees", and the like, and for any drill in connection with the device to be of a simple universal "fireman's rifle" character. It is suggested that instructional models could have attached a simple form of indicator, so that firemen learning to use the device could read the various angles on such indicator which would be of the greatest use when later using similar devices not having such indicators.

No statement can be made that the device will not occasionally slip or skid when used on a very hard surface at very low angles. Unlike a hand supported branch, however, which, once slip has occurred, may be very difficult to bring under control again, the device allows immediate correction of such slip by the lowering of the handle, and the consequent raising of the jet, which causes a reduction in rearwards pressure and an increase in downwards pressure. It is not intended, however, that continued attempts

at deliberate skid should be made, as on some surfaces, if such is possible, serious abrasive wear eventually takes place in the fibres of the hose.

- 5 The device is designed to be operated with the branchman in a standing position. It can, however, be operated with the branchman in a sitting position and can be maintained at some angles with the branchman prone on the ground; the handle can be hooked to his body-belt during periods of rest, or can be maintained on the ground by his boot; and the method of handle adjustment allows the handle position most convenient for working.

CONSTRUCTION.

The device will be described in two parts, namely the coupling, hose and branch support, and the adjustable operating handle.

- 20 The coupling, hose and branch support has two main parts, namely, the curved hose guide, and its coupling clamp, with its adjustable front spike. The description assumes the device to be supported in a position in which it would deliver a jet at the maximum elevation angle, but at no lateral angle. The curved hose guide comprises a curved length of metal, mainly semi-circular in section, the opening being downwards and forwards, the ends of this length, one facing rearwards and one facing upwards, if extended straight having an angle approximately 75 degrees between them. Above and on the rear of this length are two plates, triangular shaped, as seen from the side, suitably braced or strengthened to take the operating handle between them. A tool box may be incorporated between them. About one-third along the lower edges of this length, as measured from the rear, one on each side, are two spikes, to assist ground grip when the device is being used at a low lateral angle accompanying a high elevation angle. The central third along the lower edges is bell-mouthed, the said bell-mouthing being at its least in front of the spikes mentioned and at its greatest approximately half way between the said spikes and the upper end of the said length, and not extending beyond the half-way point. The upper third of this length is somewhat tapered internally, being greatest at the top, to take the female coupling of the type referred to previously, namely that having a substantial extension below the lugs, in which the hose is gripped and maintained by an internal expanded ring, the substantial extension being the part on which a hold is obtained in this device. On the right or left side, as considered most suitable, of the upper third mentioned, is a strong form of hinge, on the

remaining side two extensions into which the locking nuts engage, and on the top are two U-shaped, or half-U-shaped, pieces, facing upward, to take the coupling lugs.

70 The clamp to hold the coupling is hinged to the upper third of the curved length now described at the place indicated and is similar in shape to the said third, also being semi-circular and somewhat tapered to suit the coupling. Two strong handled locking nuts extend from the side opposite the hinge, and are adapted to engage the extensions referred to, so as to obtain an unfailing grip. The top of this clamp has two half-U-shaped pieces, facing rearwards, the arms of which pass over the coupling lugs as the clamp is closed, and prevent the coupling rising. The lower end of this clamp is so bell-mouthed that it forms a continuation of the bell-mouthing referred to previously, all of which bell-mouthing is for the purpose of assisting hose curvature and to prevent hose cut. On the front of this clamp is secured a tube facing upwards and downwards, having a form of lock bolt, in which tube a spike is maintained by the lock bolt, which bolt is mainly for the height adjustment of the spike, the point of which faces downwards and forwards, and which has a suitable form of collar, to prevent excessive penetration or "ploughing" of any ground surface not of a hard nature.

100 The operating handle is described in two parts, namely the main control tubular handle with its twist grip mechanism, and the link tube and its attachments. The tube of the main control handle is hinged between the triangular plates, previously mentioned, at a point immediately above the rear of the curved hose guide, so that up and down movement is possible. At a position between half way and two-thirds the length along this tube, as measured from the hinge, are two long slots, one on each side of the tube, and the tube hereabouts is strengthened by a bushing or sleeving having similar slots. On the handle end of the tube is a form of gear box having removable cover and base of thin pressed metal. Extending from the left side of the box is a half grip handle having a motor cycle type rubber grip. Extending from the right side of the box is a short tubular bearing. The remaining half grip handle passes through this bearing, has a similar rubber grip, and the end extending into the box has a suitable bevel gear wheel attached. The side of the box attached to the tube of the main control handle also has a bearing central in the end of the tube. A threaded spindle passes through this bearing, and the end of this spindle extending into the box has

a suitable bevel gear wheel which engages the wheel previously mentioned. Inside the operating end of the tube of the main control handle is a further short length of tube which has a long tapped bush secured in one end, and adapted to fit the threaded spindle mentioned, and which also has a hole drilled diametrically adjacent to its other end. Thus, assuming a bolt were passed through the slots and the diametric holes mentioned, and the twist grip handle were turned, the bolt could be made to travel the length of the said slots as required. On the rear side of the box are two J-shaped hooks to engage the branchman's belt. The link tube is hinged between the triangular plates mentioned at a position above but somewhat rearwards of the hinging of the tube of the main control handle, and also to allow up and down movement. The rear end of the link tube is hinged between two small plates, each extending upwards from short lengths of metal, which short lengths are semi-circular in section, adapted to be a sliding fit on the tube of the main control handle. A bolt passes centrally cross-wise through these short lengths and also through the slots and diametric holes mentioned. Thus, with the handle assembled as stated, the turning of the twist grip will cause an alteration in the relative handle angle to jet elevation angle.

The device is finished to suit fire fighting requirements.

TO USE THE DEVICE.

One man only. Hose and branch laid ready on ground. The coupling and branch are not lifted by hand.

1. Hold device with its handle upwards and the clamp open, move over coupling

and engage coupling lugs.

2. Lower handle to ground, and branch will rise.

3. Place one foot on device well behind the two spikes, close and secure clamp.

4. Hold handle grip. Water on.

5. Adjust handle as required.

6. Do not raise handle above breast height, as control decreases above this position.

7. Remove any initial crease which may form at an initial high angle by a temporary lowering of the jet.

MAINTENANCE AND ADJUSTMENTS.

All working parts should be oiled occasionally to prevent rusting up. The front spike may be permanently adjusted to any position as may be required and so as to give a spike grip at low angles and hose grip at high angles or an all angle spike grip. As a general rule the setting should allow spike grip at low angles and hose grip at high angles, as this reduces hose slide, and consequent risk of hose abrasion, to a minimum, though occasionally, as on a surface covered with matter of a greasy or slimy nature, all angle spike grip may be more satisfactory. The spike may be removed for grinding as necessary. The device should be maintained, when not in use, with its handle approximately in line with the rear portion of hose support, as this is most convenient for attachment of hose and coupling on any following occasion. With care, the device should give indefinite service, replacements, if any, only being necessary after very long service.

Dated the 13th day of February, 1943.

F. W. BURT.

COMPLETE SPECIFICATION

Improved Support for Fire Hose

I, FREDERICK WILLIAM BURT, of "St. Johns", Avon Road, Devizes, Wiltshire, British Subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

GENERAL INFORMATION.

The invention is an improved support for fire hose, and comprises a device, by means of which a fire fighting jet, of any of the many sizes in general use, up to a maximum of 2" diameter at 100 lbs. pressure, can be under the hand control only, of one man, for indefinite periods; and which also allows the setting up (assuming the branch and hose is laid ready and is in a water off condition) and removal from the scene of fire without assistance of any

description. It is, in fact, a one man only support throughout all operations connected with its use, unless it is being used in very unfavourable circumstances or with a jet of very large diameter. The device has an elevation range of 0 degrees to about 75 degrees, and an accompanying lateral range (throughout its elevation range) of about 80 degrees inclusive. It is designed to take a type of female coupling which appears now to be made considerable use of by fire authorities, and it is not intended that any other type of coupling should be used; in addition it is designed for a definite size and type of rubber lined hose, as also appears to be made considerable use of. At the same time however, it may be considered an improvement for a short length of high pressure flexible

hose, externally protected as a car tyre, to be permanently attached to the holder, as this would allow any class of hose to be used.

- 5 The device comprises a support for the branch, coupling and hose adjacent, which support rests on the ground and at the rear of which is an adjustable operating handle. The part which grips the coupling is hinged and is held in its closed position by one screw down handled nut, and it is not possible for the coupling to leave the device or to become dangerously loose, or move out of position, (assuming the device is correctly set up).

- 15 Bearing in mind the fact that the device is capable of supporting a substantial jet, and that it is for one-man operation throughout, it is considered that handle control must exist at all times when in use, and therefore any method of adjustment of handle which would mean a temporary loss of such control cannot be allowed. The adjustment of the handle angle relative to the jet elevation angle, therefore, is by a twist-grip control, and all the working parts of this arrangement are enclosed, to avoid damage by water. This arrangement, however, does not allow the handle to be adjusted below breast height when the device is being used with a jet at 0 degrees elevation, so that, should skid occur, it can be checked by lowering the handle. The handle is of a length giving great leverage and control over the coupling and branch when raised in position from the ground, and the whole device is of substantial construction, and capable of withstanding a great amount of mis-use. It is suitable for use with almost all sizes of pumps and can be easily carried on any fire-fighting appliance.

- 35 The purpose of the device is to reduce the branchman's effort to a very low percentage of that required to support a branch by hand, to avoid fatigue common to branch holding, and to make branch control a comfortable scientific operation.

- 45 It is considered that, to avoid accidents, careful instruction in its use is essential, and it would be of advantage for firemen to have a knowledge of "elevation", "lateral range", "degrees", and the like, and for any drill in connection with the device to be of a simple universal "fireman's ride" character. It is suggested that instructional models could have attached a simple form of indicator, so that firemen learning to use the device could read the various angles on such indicator, which would be of the greatest use when later using similar devices not having such indicators.

- 60 No statement can be made that the device will not occasionally slip or skid

when used on a very hard surface at very low angles. Unlike a hand supported branch, however, which, once slip has occurred, may be very difficult to bring under control again the device allows immediate correction of such slip by the lowering of the handle, and the consequent raising of the jet, which causes a reduction in rearwards pressure and an increase in downwards pressure. It is not intended, however, that continued attempts at deliberate skid should be made, as on some surfaces, if such is possible, serious abrasive wear eventually take place in the fibres of the hose.

80 The device is designed to be operated with the branchman in a standing position. It can, however, be operated with the branchman in a sitting position and can be maintained at some angles with the branchman prone on the ground; the handle can be hooked to his body belt during periods of rest, or can be maintained on the ground by his boot; and the method of handle adjustment allows the handle position most convenient for working.

I find that, using 2½" R.L. hose as suggested, the device functions in a very satisfactory manner, full control over the device over long periods with a large jet being easily within the strength of the average fourteen-year-old lad, and I consider that its qualities should make it of value in general fire-fighting, especially where the question of man power is of importance.

100 It would be of advantage for any study of this specification to be undertaken with an accompanying study of my earlier specifications 546,813 and 554,711, as a fuller understanding of the principles and working of the device may be obtained by such study.

THE ACCOMPANYING DRAWINGS. 110

These show various views of the device, also enlargements of parts of the device.

Figure 1 is a perspective drawing of the device complete.

Figure 2 is an enlarged perspective drawing of the front portion of the device with the coupling clamp open, the swing out nut being opposite to its closed position.

Figure 3 is an enlarged perspective drawing of the extension into which the clamp locking handle engages.

Figure 4 is a sectional drawing except the spindle thread, and shows the working parts forming the adjustment from the twist-grip control to the rear end of the link tube.

Figure 5 is a side elevation drawing, details excluded, at a low elevation angle with hose in position and under pressure.

Figure 6 is a side elevation drawing, details excluded, at a high elevation angle, with hose in place and under pressure. The hose grip on ground will be noted.

5 Figure 7 is a side elevation drawing, details excluded, at a high elevation angle with hose in place and under pressure, but set for spike grip instead of hose grip.

Figure 8 is a front view drawing, details excluded, at a lateral angle.

CONSTRUCTION.

The device will be described in two parts, namely the coupling, hose and branch support, and the adjustable operating handle.

15 The coupling, hose and branch support has two main parts, namely, the curved hose guide, and its coupling clamp, with its adjustable front spike. The description assumes the device to be supported

20 in a position in which it would deliver a jet at the maximum elevation angle, but at no lateral angle. The curved hose guide A comprises a curved length of metal, mainly semi-circular in section,

25 the opening being downwards and forwards, the ends of this length, one facing rearwards and one facing upwards, if extended straight having an angle approximately 75 degrees between them.

30 Above and on the rear of this length are two plates B, triangular shaped, as seen from the side, suitably braced or strengthened to take the operating handle K and its link tube R¹ between them, and

35 having holes drilled in suitable position near the rear end of these plates B for that purpose. A tool box may be incorporated between them if desired, though the specification makes no further mention of this

40 tool box. About one-third along the lower edges of this length A, as measured from the rear, one on each side, are two spikes A¹, to assist ground grip when the device is being used at a low lateral angle

45 accompanying a high elevation angle, these spikes A¹ facing somewhat outwards. The central third along the lower edges is bell mouthed, the said bell mouthing being at its least greatest approximately half-

50 way between the said spikes and the upper end of the said length A, and not extending beyond the half-way point. The upper third of the length A is somewhat slightly tapered internally, being greatest

55 at the top, to take the female coupling of the type referred to previously, namely that having a substantial extension below the lugs, in which the hose is gripped and maintained by an internal expanded

60 ring, the substantial extension being the part on which a hold is obtained in this device. On the left side of the upper third mentioned, is a strong form of hinge, comprising two extensions D³ and D⁴ of

65 strip metal, which engage similar exten-

sions D¹ and D² on the coupling clamp and which have holes drilled in suitable positions for the hinge pin D; on the remaining side an extension J into which the locking nut G¹ engages, and on the top are two U-shaped pieces A² facing upward, to take the coupling lugs, the centre line of these U-shaped pieces A² being in line with the front edge of the upper third, as seen from the side.

The clamp to hold the coupling is hinged to the upper third of the curved length now described at the place indicated and comprises a piece C similar in shape to the said third, also being semi-circular and somewhat tapered to suit the coupling, and its attachments and having its rear upper corners cut away to allow for the U-pieces A². A strong swing-out tubular handled locking nut G¹ extends from the side opposite the hinge and is adapted to engage the extension J referred to, so as to obtain an unfailling grip. This locking nut G¹ screws on to a bolt G having a flat head through which a hole is drilled, the said head engaging between two flat extensions E and E¹, which extensions E and E¹ are similarly drilled for a pin E². The top of this clamp has two half U-shaped pieces F and F¹, facing rearwards, the arms of which pass over the coupling lugs as the clamp is closed, and prevent the coupling rising. One of these pieces F is secured to the upper hinge piece D¹, and the other F¹ to the upper clamp bolt extension E. The lower end of this clamp is so bell-mouthed that it forms a continuation of the bell-mouthing referred to previously, all of which bell-mouthing is for the purpose of assisting hose curvature and to prevent hose cut. On the front of this clamp is secured a tube C¹, facing upwards and downwards, and having a form of lock bolt C³, with nut C² secured to the tube C¹, extending from the right or left side, in which tube C¹ a spike H is maintained by the lock bolt C³, which bolt C³ is mainly for the height adjustment of the spike H, which is of solid metal and the point H³ of which faces downwards and forwards, and which has a suitable form of collar H¹, to prevent excessive penetration or "ploughing" of any ground surface not of a hard nature.

The extension J in which the tubular handled locking nut G¹ engages is constructed of sheet metal shaped approximately as follows. A square has on one side a semi-circle external to the square. Central in the semi-circle and extending into the square is a U-shaped opening. Supporting walls extend from the sides of the square. Very narrow walls extend from the sides of the remaining parts of the semi-circle to prevent the handle lock-

ing nut slipping out of place. This extension J is secured to the side of the upper third of the curved length A so that the U-shaped opening faces outwards as seen from the front, its supporting walls being at its rear.

The four extensions D¹, D², D³ and D⁴ comprising the main parts of the hinge have their outer ends finished in the shape of a semi-circle in the centre of which a hole of suitable size is drilled, through all of which holes a suitable hinge-pin or bolt D is passed. Each extensions of each pair is a satisfactory rubbing fit around the pin hole with its partner. The upper pair D¹ and D² are near the upper end of the upper third mentioned and the lower pair D³ and D⁴ near the lower end of the upper third mentioned. Those D³ and D⁴ attached to the upper third mentioned are the internal hinge extensions and those D¹ and D² attached to the clamp piece C are the external hinge-extensions. Each pair is secured to the upper third mentioned and the clamp piece C, so that they appear to form, when the clamp is closed, and as seen from above, a figure similar to an isosceles triangle, the base of which is an arc corresponding to the outside curvature of the upper third mentioned and the clamp piece C, and the apex of which is an arc of radius equal to the semi-circular ends, and the sides of which form tangents to the said arc.

The operating handle is described in two parts, namely the main control tubular handle with its twist grip mechanism, and the link tube and its attachment. The tube K of the main control handle is hinged by a suitable bolt B¹ between the triangular plates B, previously mentioned, at a point immediately above the rear of the curved hose guide A, so that up and down movement is possible. At a position between half-way and two-thirds the length along this tube K, as measured from the hinge, are two long slots K¹, one on each side of the tube, and the tube hereabouts is strengthened, if advisable, by a bushing or sleeving having similar slots. On the handle end of the tube K is a form of gear box L having removable cover M and base M¹ of thin pressed metal, and attached by suitable screws to the box. Extending from each side of the box is a short tubular bearing L¹. Passing through these bearings L¹ is a length of tube N which extends sufficiently beyond each bearing to take a rubber hand grip N¹, and give the handle suitable length for good control. A suitable bevelled gear wheel N² is attached by suitable means to this length of tube N, inside the box L, but on the right side. The side of the box L attached to the tube K of the main

control handle also has a bearing central in the front of the gear box L. A threaded spindle O passes through this bearing, and the end of this spindle O extending into the box has a suitable bevelled gear wheel O¹ attached by suitable means, which engages the wheel N² previously mentioned. Inside the operating end of the tube K of the main control handle is a further short length of tube P which has a long tapped bush secured in its rear end, and adapted to fit the threaded spindle O mentioned, and which also has a hole drilled diametrically adjacent to its other end. Thus, assuming a bolt P¹ were passed through the slots K¹ and the diametric hole mentioned, and the twist grip handle were turned, the bolt P¹ could be made to travel the length of the said slot K¹ as required. On the rear side of the box are two J-shaped hooks S to engage the branchman's belt. The link tube R¹ is hinged between the triangular plates B mentioned by a bolt B², at a position above but somewhat rearwards of the hinging of the tube K of the main control handle, and in a similar manner, and also to allow up and down movement. The rear end of the link tube R¹ has secured two extensions R of flat metal, facing one another and extending downwards, having their lower ends shaped to a semi-circle and having suitable holes in the centre of the said semi-circles to take the bolt P¹ mentioned, which bolt P¹ passes cross-wise through these extensions R and also through the slots K¹ and diametric holes mentioned, and is adjusted in such a manner that the main tube K is a good sliding fit between the extensions R. Thus, with the handle assembled as stated, the turning of the twist grip will cause an alteration in the relative handle angle to jet elevation angle.

The device is finished to suit fire fighting requirements.

TO USE THE DEVICE.

One man only. Hose and branch laid ready on ground. The coupling and branch are not lifted by hand.

1. Hold device with its handle upwards and the clamp open, move over coupling and engage coupling lugs.

2. Lower handle to ground, and branch will rise.

3. Place one foot on device well behind the two spikes, close and secure clamp.

4. Hold handle grip. Water on.

5. Adjust handle as required, according to the height of target.

6. Do not raise handle above breast height, as control decreases above this position.

7. Remove any initial crease which may form at an initial high angle by a tem-

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porary lowering of the jet.

8. Check low angle skid, if any, by lowering handle, which will give a renewed grip on the ground.

9. Move handle in the form of the arc of a circle, as seen from above, to cover lateral angles accompanying a low elevation angle.

10. Move handle in the form of an arc of a circle, as seen from the rear, to cover any lateral angle accompanying a high elevation angle.

11. Raise quickly to check any skid which may develop from a low lateral angle accompanying a high elevation angle.

12. The twist grip is for slow elevation movement only. Handle movements will cover all rapid jet movements required.

20 MAINTENANCE AND ADJUSTMENTS.

All working parts should be oiled or greased occasionally to allow satisfactory working and to prevent rusting up. The front spike may be permanently adjusted 25 to any position as may be required and so as to give a spike grip at low angles and hose grip at high angles or an all angle spike grip. As a general rule the setting should allow spike grip at low angles and 30 hose grip at high angles as this reduces hose slide, accompanying elevation angle alterations, and consequent risk of hose abrasion, which might occur on rough surfaces, to a minimum, though occasionally, 35 as on a surface covered with matter of a greasy or slimy nature, all angle spike grip may be more satisfactory. The spike may be removed for grinding as necessary. The device should be maintained, when not 40 in use, with its handle approximately in line with the rear portion of hose support, as this is most convenient for attachment of hose and coupling on any following occasion. With care, the device should 45 give indefinite service, replacements, if any, only being necessary after very long service.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. An improved support for fire hose, comprising a curved member, mainly 55 semi-circular in section, the opening facing downward and forward, having on its rear part two triangular shaped plates adapted for the attachment of an operating handle, and on its lower edges two 60 ground engaging spikes, the edges in front of these spikes being bell-mouthed, and on its upper end two U-shaped pieces to engage the coupling lugs, and on one side two extensions forming part of a hinge,

and on the opposite side an extension to 65 engage a handled locking nut, and on the front of its upper part a coupling clamp comprising a member, mainly semi-circular in section, somewhat bell-mouthed on its lower edges, and having 70 on one side two extensions adapted to engage the two extensions above mentioned, which, with a suitable pin or bolt, form a hinge, and on its other side two 75 further extensions between which a swing out bolt is pinned, on which bolt is a handled tubular locking nut, the upper part of the clamp having two half U-shaped pieces facing rearwards, to engage the coupling lugs, and having secured to 80 its front part a tube having a lock bolt on one side, in which tube a spike is maintained by the said bolt, the said spike having a suitable collar and also having a point bent somewhat forward. 85

2. In combination with the improved support for fire hose, as claimed in claim 1, an adjustable operating handle comprising a main tubular member, the front end of which is attached to the triangular 90 plates on the curved member by a suitable bolt, and having two slots adapted for movement of a bolt, and on its rear end a gear box having removable cover and base, from the sides of which box 95 extend two tubular bearings through which a tubular operating handle passes, which handle has attached a suitable bevelled gear wheel, internal in the gear box, and engaging a further bevelled gear 100 wheel attached to the end of a screwed spindle, which is internal in the rear end of the main tubular member and has a bearing in the front end of the gear box, and which engages in the threaded end 105 of a short tubular member, also internal in the rear end of the main tubular member, which short tubular member has holes drilled diametrically to correspond with the slots above mentioned, through which 110 slots and diametric holes a bolt is passed, which bolt also passes through holes in two extensions, between which the main tube is a sliding fit, on the rear end of a link tube, the front end of which is 115 attached between the upper part of the triangular plates on the curved member, above and somewhat rearwards of the attachment of the main tube, by a suitable bolt. 120

3. Combined with the improved support for fire hose, as claimed in claims 1 and 2, the addition of a body attachment comprising J-shaped belt hooks secured to the rear of the gear box of the operating 125 handle.

Dated the 17th day of January, 1944.

F. W. BURT.

[This Drawing is a reproduction of the Original on a reduced scale.]

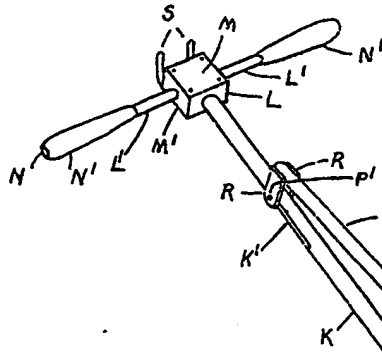


FIG. 1.

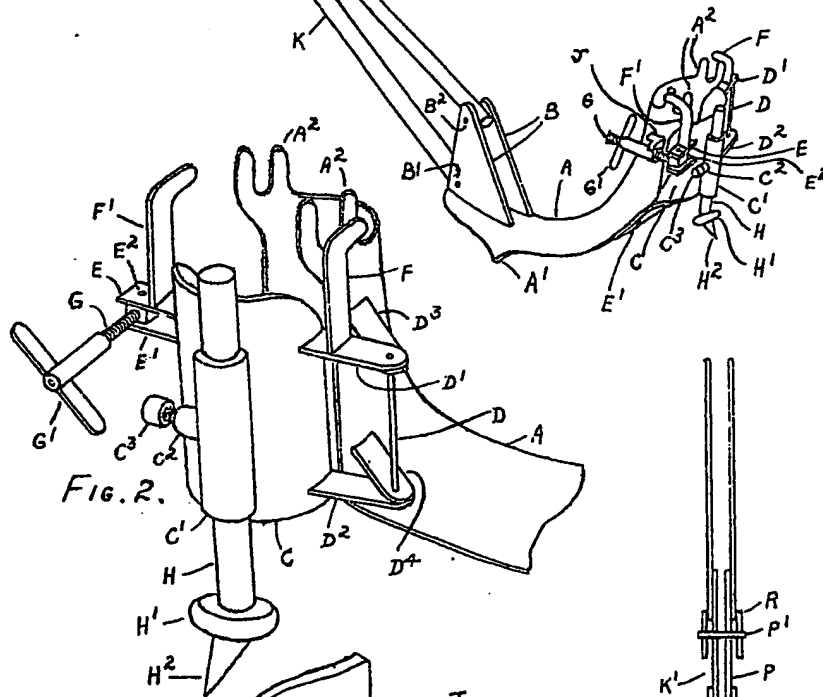


FIG. 2.

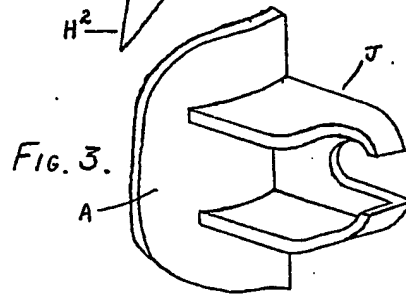


FIG. 3.

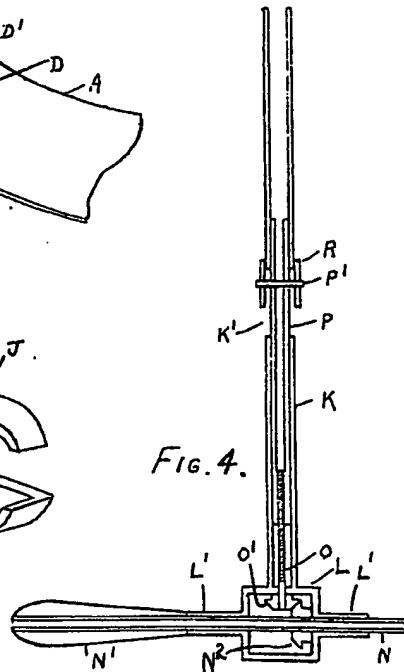


FIG. 4.

EET 1

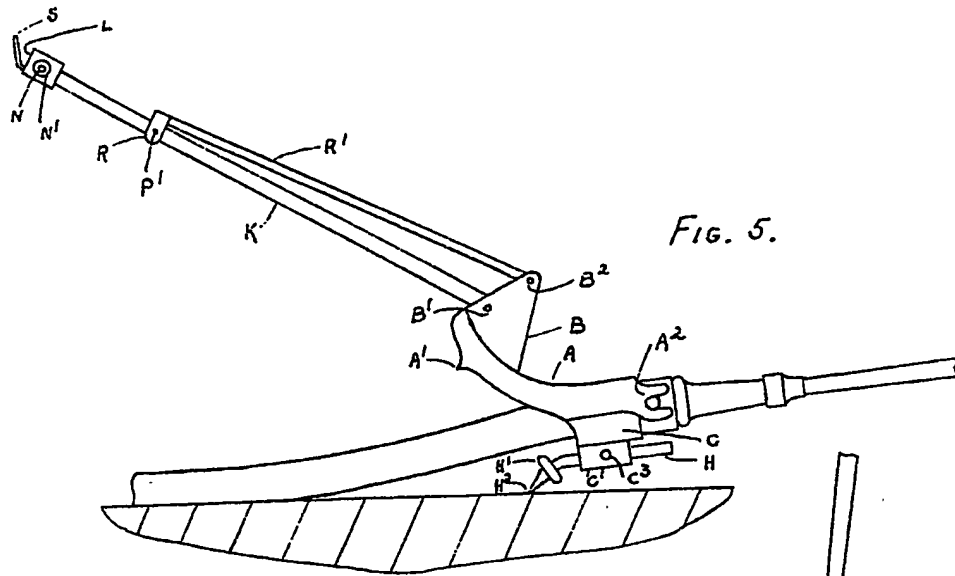


Fig. 5.

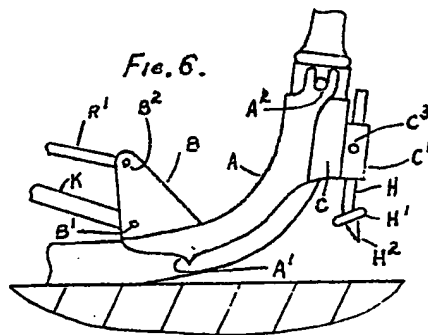


Fig. 6.

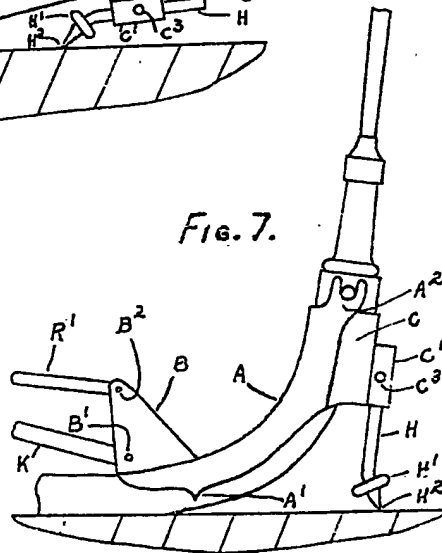


Fig. 7.

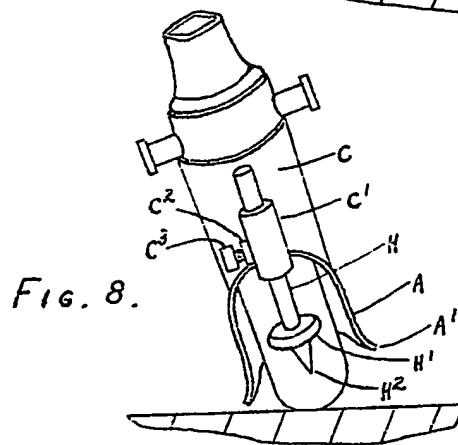


Fig. 8.

[This Drawing is a reproduction of the Original on a reduced scale.]

